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10/768,758	01/30/2004	Theodore Thomas Blackmon	107051-0023	7062
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			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/768,758

Applicant(s)BLACKMON, THEODORE
THOMAS**Examiner**

Dean T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-13 and 15-40 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-13 and 15-40 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/30/2010 has been entered.

Claims Status

Claims pending: 1-13 and 15-40.

1) Claims amended: 1, 8, 10, 11, 12, 15, 17, 21-23, 34, 38 and 39.

2) Claims canceled: 14.

As of 7/30/2010, claim 1 is as followed:

1. (CURRENTLY AMENDED) A method for managing a construction project comprising:

generating, by one or more central processor units (CPUs) executing an application, a computerized simulation model for the construction project representing project materials in the construction project;

mapping the project materials represented in the computerized simulation model into constructible elements;

displaying the constructible elements as three-dimensional objects in a graphical user interface;

determining at least one work step for each constructible element;

receiving a selection in the graphical user interface of at least one constructible element represented as a three-dimensional object to create a work package in the computerized simulation model, the work package comprising the at least one constructible element and the at least one work step for the at least one constructible element; and

receiving a selection in the graphical user interface of a visual display of the work package and an indication of a sequencing to apply to the work package with respect to a plurality of other work packages, which each comprise at least one constructible element and at least one work step.

Claims Interpretations

1. 1) In independent claims 1, 17, 34 and 39, in step/function (b) the phrase “...to apply to the work package ...” is not a positively recited method step but, rather, is mere intended use of the indication sequence and thus may not or having any patentable weight.

See MPEP:

(1) 2106 “Patent Subject Matter Eligibility”, ...

(A) Statements of intended use of field of use”,

(2) MPEP 2111.04, which indicate that a method claim requires active, positive steps,

(3) MPEP 2112.02 "Process Claims".

Process claims, also known as method claims, generally include a preamble, a transition, and a series of steps to be performed as part of the process. Process steps typically begin with a verb in its gerund ("ing") form. Examples include:

- detecting a signal,
- transmitting data to a controller, and

(4) MPEP 2173.05 (q), "Use" Claims", but indicates that a proper process claim requires **active, positive steps**.

(5) Ex parte Brune, Appeal No. 2009-004 646, August 7, 2009, which rejected independent method claim for passive claiming, i.e. "*a device **can be selected** using a control device*" and "*the user interface of a **first device is displayed***". The Board noted that a method claim should have: "*An undisputable method claim has clauses that are designated by a present participle and separated with a comma (or semicolon that includes a comma)*". See *Credle v. Bond*, 25 F.3d 1566, 1572 (Fed. Cir. 1994).

There is no actual step calling for "applying the work package..". Changing the language to "and applying..." is recommended to improve clarity.

Claim Rejections - 35 USC § 112

2. Claims 39-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim elements of claims 39-40 is a limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to clearly link or associate the

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disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function.

Applicant may:

(a) Amend the claim so that the claim limitation will no longer be interpreted as a limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or

(c) State on the record where the corresponding structure, material, or acts are set forth in the written description of the specification and linked or associated to the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

4. Claim elements of claims 39-40 is a limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function of claims 39-40.

Applicant may:

(a) Amend the claim so that the claim limitation will no longer be interpreted as a limitation under 35 U.S.C. 112, sixth paragraph; or

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(b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant should clarify the record by either:

(a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or

(b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. **Claims 1, 2, 4, 6-8, 13, 15-17, 19-22, 26-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over (1) Schwegler et al., "New Information Technology Tools Enable Productivity Improvements," 2000 North American Steel Construction Conference Proceedings, 2000, pages 11/3-11/20 (hereinafter Schwegler) in view of (2) Schwegler, Jr. et al., U.S. Patent Number 7,042,468 B2 (hereinafter Schwegler '468).

Regarding **Claims 1, 17, 34, 39**, Schwegler teaches managing a construction project comprising: generating, by one or more central processor units (CPUs) executing an application, a computerized simulation model for the construction project representing project materials in the construction project (page 11/6, section 1.3; Figure 1); mapping the project materials represented in the computerized simulation model into constructible elements (page 11/6, ¶4; effective staging and sequencing of work).

2. Schwegler '468 teaches displaying the constructible elements as three-dimensional objects in a graphical user interface (column 6, lines 46-67; Figure 8) and the amended limitations of "receiving a selection in the graphical user interface of a visual display of the workpackage and an indication of a sequencing [to apply to the work package with respect to a plurality of other work packages, which each comprise at least one constructible element and at least one work step]". See Fig. 12 and col. 5, line 60 to col. 6, line 65, col. 7, lines 1-45. Schwegler teaches 3D/4D simulation modeling for project planning, design and construction management (page 11/5, 1.2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

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invention to include the display of constructible elements in 3D in order to better communicate the design of a construction project and including the selection of activities or work in a sequence (schedule). Furthermore, the phrase the phrase “...to apply to the work package ...” is not a positively recited method step but, rather, is mere intended use of the indication sequence and thus may not or having any patentable weight.

Schwegler '468 further teaches determining at least one work step for each constructible element (column 2, lines 22-39). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify and include in Schwegler's simulation the capability of Schwegler '468 to break down a project into smaller elements in order to manage the project efficiently and effectively. It is well known to break down large projects into smaller, more manageable segments in order to complete the project.

Schwegler '468 further teaches receiving a selection in the graphical user interface of at least one constructible element represented as a three-dimensional object to create a work package in the computerized simulation model, the work package comprising the at least one constructible element and the at least one work step for the at least one constructible element (column 5, line 53 – column 6, line 67; Figure 4; Figure 8; Figure

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12, element 204, *select 3D component*).

Schwegler further teaches sequencing a plurality of work packages for release to work crews (page 11/6, section 1.3, *all project and construction manager should have project information available at the right level of detail and scope... staging and sequencing of work enables efficient use of resources and minimizes the waste of labor and materials*).

Regarding Claims 2 and 19, Schwegler further teaches organizing the constructible elements into construction areas in the computerized simulation model (Figure 2).

Regarding Claims 4 and 20, Schwegler further teaches organizing the constructible elements into systems for testing and turnover in the computerized simulation model (Figure 2; page 11/9, section 2.3; page 11/11, section 3.1.2).

Regarding Claims 6, 26, 35, and 40, Schwegler further teaches generating a visual display of the computerized simulation model (page 11/5, section 1.2).

Regarding Claims 7, 27, and 36, Schwegler further teaches generating an interactive three-dimensional graphical display of the computerized simulation model (page 11/5, section 1.2; page 11/10, section 2.5).

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Regarding Claims 8, 21, 22, and 38, Schwegler '468 further teaches wherein receiving a selection in the graphical user interface of the at least one constructible element further comprises allowing a user to point-and-click on the at least one constructible element in a visual display of the computerized simulation model to select the at least one constructible element (column 5, line 53 – column 6, line 67, *Drag and drop supports linkage to CAD Components*). Schwegler teaches links between any level of detail of the product and process models (page 11/5, section 1.2) and links between 3D components and activities (page 11/10, section 2.5). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide point-and-click capabilities in order to manage the project efficiently and effectively.

Regarding Claims 13, 28, and 37, Schwegler teaches an interactive three dimensional simulation (page 11/5, section 1.2).

Regarding Claim 14, Schwegler teaches wherein sequencing a plurality of work packages for release to work crews (page 11/6, section 1.3, *all project and construction manager should have project information available at the right level of detail and scope... staging and sequencing of work enables efficient use of resources and minimizes the waste of labor and materials*). Schwegler '468 teaches receiving a selection of the work packages in a visual display of the computerized simulation model via a graphical user interface (Figures 1, 7a, and 7b). It would have been obvious to

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one of ordinary skill in the art at the time of the invention to sequence tasks accordingly in order to manage the project efficiently and effectively.

Regarding Claims 15 and 29, Schwegler teaches assigning the work package to a work crew in response (page 11/6, section 1.3, *all project and construction manager should have project information available at the right level of detail and scope*). Schwegler further teaches use of the Internet which *allows parties who are given project access to the 4D information to create, revise, and view 4D models. This gives the team members direct access to the 4D project database* (page 11/10, first bullet). Schwegler '468 teaches receiving a selection of the work package in a visual display of the computerized simulation model via a graphical user interface (Figures 1, 7a, and 7b). It would have been obvious to one of ordinary skill in the art at the time of the invention to assign tasks accordingly in order to manage the project efficiently and effectively.

Regarding Claim 16, Schwegler teaches accessing engineering data for the construction project in a database, wherein generating a computerized simulation model is based on the engineering data; and accessing manufacturing data for the construction project in an other database, wherein mapping the project materials into constructible elements is based on the manufacturing data (page 11/10, sections 2.4 and 2.5; page 11/17, section 6.3).

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Regarding Claim 30, Schwegler further teaches a reprioritization module configured to reprioritize the sequence of the work packages (page 11/10, section 2.5; re-sequence).

Regarding Claim 31, Schwegler further teaches analyzing spatial constraints between components and activities (page 11/11, section 3.1.3).

Regarding Claim 32, Schwegler further teaches a verification module configured to analyze resource constraints for the construction project to determine whether a work crew can execute the work package subject to the constraints (page 11/9, section 2.2; verify whether the design is buildable; page 11/15, section 5.2; verification of constructability and verification of site constraints in design and schedule).

Regarding Claim 33, Schwegler does not explicitly teach a converter module configured to convert data accessed from an external database into a common format for use in a matching module. However, Schwegler does disclose use of the web (page 11/10, section 2.4), the use of e-commerce (page 11/17, section 6.5), and the importance of information exchange (page 11/16, sections 6.1 and 6.2). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the capability of accessing data from other databases in order to facilitate project management.

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6. **Claims 3, 5, 9-12, 18, and 23-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwegler in view of Schwegler '468 and further in view of Kroeger, U.S. Patent Application Publication Number 2002/0165723 A1 (hereinafter Kroeger).

Regarding Claims 3 and 18, neither Schwegler nor Schwegler '468 explicitly teach organizing the constructible elements into construction crafts in the computerized simulation model. However, Kroeger discloses organizing the construction into the different crafts (Table 1A). It would have been obvious to one of ordinary skill in the art at the time of the invention to separate the elements into the different crafts in order to be able to hire the particular subcontractor to do the job. It is well known that subcontractors are by craft, i.e., electrical, plumbing, carpentry.

Regarding Claim 5, neither Schwegler nor Schwegler '468 explicitly teach prioritizing procurement of the constructible elements based on target installation dates of the constructible elements. However, Kroeger discloses prioritizing procurement based on target installation dates ([0005]). It would have been obvious to one of ordinary skill in the art at the time of the invention to prioritize procurement based on target installation dates in order to save time and money. This is well known.

Regarding Claims 9 and 23, neither Schwegler nor Schwegler '468 explicitly teach providing status information. However, Kroeger discloses providing status information ([0153]). It would have been obvious to one of ordinary skill in the art at the time of the

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invention to provide status information of tasks in order to manage the project efficiently and effectively.

Regarding Claim 10, Kroeger further discloses keeping track of tasks completed ([0154]). It would have been obvious to one of ordinary skill in the art at the time of the invention to keep track of when tasks are completed in order to manage the project efficiently and effectively. This is well known.

Regarding Claims 11 and 24, Kroeger further discloses time estimates for tasks ([0113]; [0187]). It would have been obvious to one of ordinary skill in the art at the time of the invention to create time estimates of tasks in order to manage the project efficiently and effectively. This is well known.

Regarding Claims 12 and 25, Kroeger further discloses cost estimates for tasks ([0113]; [0174]; Table 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to create cost estimates of tasks in order to manage the project efficiently and effectively. This is well known.

Response to Amendment

2. Amendments to claims 8 and 17 are sufficient to overcome improper grammar objections set forth previously.

Response to Arguments

3. As to Applicant's remarks regarding the limitations *to create a work package in the computerized simulation model, the work package comprising the at least one constructible element and the at least one work step for the at least one constructible element; and sequencing a plurality of work packages for release to work crews*, the obviousness rejection is maintained.

As referenced, Schwegler '468 in Figure 4 illustrates Component Concrete Columns – NE, Activity Pour, Start/End Dates. Schwegler '468 in Figure 7a illustrates a 3D wall structure with Form, Rebar, Close/Pour instructions with Start/End Dates. That Schwegler/Schwegler '468 do not use the phrases *work package* or *constructible element* or *work step* does not alter the steps of the method or the structure of the system. Therefore, such a difference does not effectively serve to patentably distinguish the claimed invention over the prior art.

Furthermore, regarding the limitation of *sequencing a plurality of work packages for release to work crews*, as referenced, Schwegler states that *all project and construction manager should have project information available at the right level of detail and scope... staging and sequencing of work enables efficient use of resources and minimizes the waste of labor and materials* (page 11/6, section 1.3). As well, Figure 12 of Schwegler '468 illustrates *Schedule Data, Link Activities to Schedule Items, Schedule Data with Activity States*. Also, Figure 7a, as noted above, illustrates a 3D wall structure with Form, Rebar, Close/Pour instructions with Start/End Dates. Therefore,

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the construction task or job of what is to be constructed, what materials or resources are needed, and steps that need to be taken to complete the task are sequenced.

3. Applicant's comment on pages 11-12 with respect to Schewgler '468 is not persuasive in view of the teachings on Figs. 12, 11, and cols.6-7 cited above.).

Furthermore, the phrase the phrase "...to apply to the work package ..." is not a positively recited method step but, rather, is mere intended use of the indication sequence and thus may not or having any patentable weight.

No claims are allowed.

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1. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct@uspto.gov>. Should you have any questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

1. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

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3. In receiving an Office Action, it becomes apparent that certain documents are missing, e. g. copies of references, Forms PTO 1449, PTO-892, etc., requests for copies should be directed to Tech Center 3600 Customer Service at (571) 272-3600, or e-mail CustomerService3600@uspto.gov.

4. Any inquiry concerning the merits of the examination of the application should be directed to Dean Tan Nguyen at telephone number **(571) 272-6806**. My work schedule is normally Monday through Friday from 6:30 am - 4:00 pm. I am scheduled to be off every other Friday. Should I be unavailable during my normal working hours, my supervisor Janice Mooneyham can be reached at **(571) 272-6805**. The main **FAX phone** numbers for formal communications concerning this application are **(571) 273-8300**. My personal Fax is **(571) 273-6806**. Informal communications may be made, following a telephone call to the examiner, by an informal FAX number to be given.

/Tan Dean D. Nguyen/

Primary Examiner, Art Unit 3689